

Utah State University

DigitalCommons@USU

Archived Gardening Publications

Archived USU Extension Publications

3-11-2013

Early Season Vegetable Gardening

Larry A. Sagers
Utah State University

Follow this and additional works at: https://digitalcommons.usu.edu/extension_histgarden



Part of the [Horticulture Commons](#)

Warning: The information in this series may be obsolete. It is presented here for historical purposes only. For the most up to date information please visit [The Utah State University Cooperative Extension Office](#)

Recommended Citation

Sagers, Larry A., "Early Season Vegetable Gardening" (2013). *Archived Gardening Publications*. Paper 26.
https://digitalcommons.usu.edu/extension_histgarden/26

This Presentation is brought to you for free and open access by the Archived USU Extension Publications at DigitalCommons@USU. It has been accepted for inclusion in Archived Gardening Publications by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.





Early Season Vegetable Gardening

**Larry A. Sagers
Extension Horticulture Specialist
Utah State University**

Growing More Vegetables

Getting vegetables out of season



Early Season
Vegetables

Growing More Vegetables

- The sunny weather can't help but get gardeners excited



Early Season
Vegetables

Growing More Vegetables

- Sunshine and warm weather are all it takes to inspire you to get out and get planting



Early Season
Vegetables

Growing More Vegetables

- There's no crystal ball to predict upcoming weather, so consider using season-extending gardening techniques to get a jump on things

Early Season
Vegetables



Growing More Vegetables

- When planting the garden, the weather isn't the only limiting factor



Growing More Vegetables

- Soil temperatures are often more restrictive than air temperatures. Plants may tolerate cool air temperatures, but all seeds require certain soil temperatures before they can germinate

Growing More Vegetables

- Warming the soil is one way to accelerate the gardening season



Growing More Vegetables

- The only practical method to warm soil is to utilize the natural warmth of the sun



Growing More Vegetables

- Soil that is well drained and doesn't retain large amounts of water warms faster than wet soil
- Improving drainage allows the soil to be worked earlier and allows it to warm faster

Growing More Vegetables

- Raised beds are an excellent way to counteract cool, wet soil in the early spring



Growing More Vegetables

- Test your garden to see if it is dry enough to be worked by turning over a shovel full of soil



Growing More Vegetables

- Pick up a handful and squeeze it tightly into a ball



Growing More Vegetables

- Toss the ball lightly in the air. If it crumbles, you can go ahead and till



Growing More Vegetables

- If it remains wet or stuck together, don't work the garden until it dries out



Growing More Vegetables

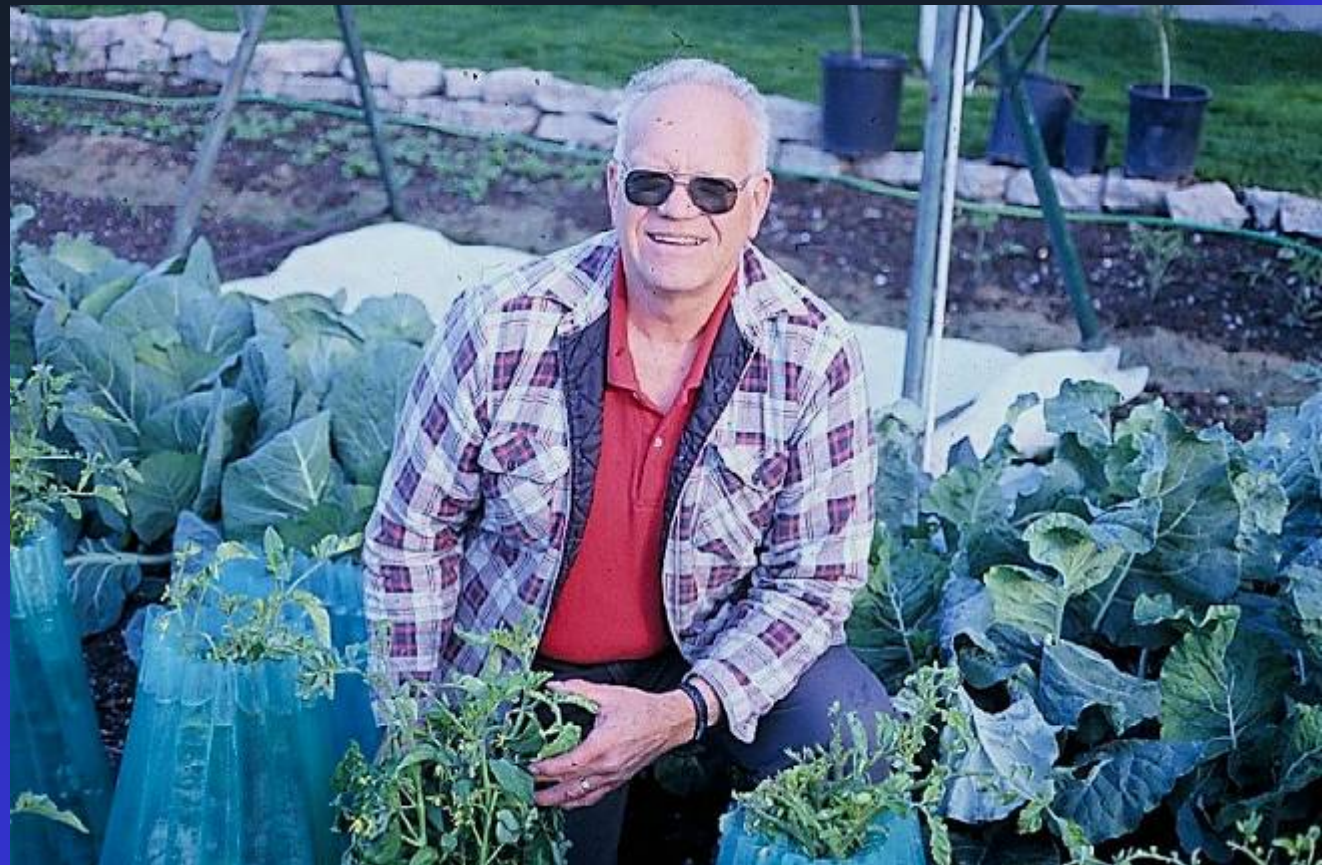
- Wall o' Waters allow the earliest planting



Early Season
Vegetables

Growing More Vegetables

- Advocates of Wall o' Waters have plants growing in them during many months



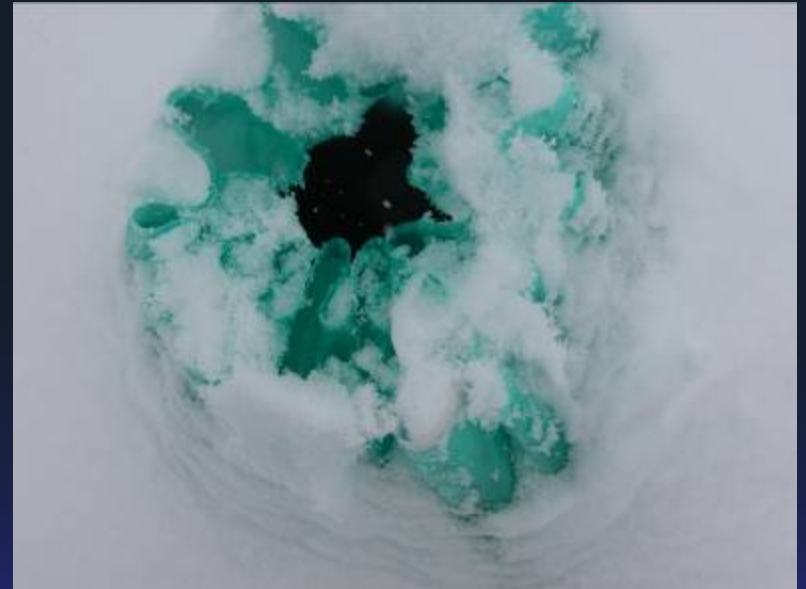
Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

- These ingenious devices hold almost 25 pounds of water



Growing More Vegetables

- The water warms during the day and releases heat at night. If temperatures get extremely cold, the water freezes and releases heat



Growing More Vegetables

- This protects and warms the plants inside and greatly accelerates both planting times and maturity



Early Season
Vegetables

Growing More Vegetables



Growing More Vegetables



Growing More Vegetables



Growing More Vegetables

- Hot caps give some protection from the wind and cold temperatures



Growing More Vegetables

- This protection is very limited and also offers minimal soil warming



Early Season
Vegetables

Growing More Vegetables

- Planting can be accelerated only a week or two with hot caps, milk jugs or similar devices



Growing More Vegetables

- The use of protective coverings to produce a miniature greenhouse effect is certainly not a new idea



Growing More Vegetables

- A popular practice among some European growers in the early 1900's was to place glass bell jars over individual plants



Growing More Vegetables

- In 1910 that there were more than 2 million of these jars being used in the Paris vicinity alone

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

- Late frosts, low yields, a short growing season and insect damage are four common problems that home gardeners would rather do without

Growing More Vegetables

- Less expensive paper "hot caps" or "hot tents" covers replaced bell jars by the 1950's.



Early Season
Vegetables

Growing More Vegetables

- Fortunately, row covers add choices to the eco-gardener's management strategy



Early Season
Vegetables

Growing More Vegetables

- Row covers are available in a variety of materials, including plastics and fabrics



Growing More Vegetables

- Floating row covers allow earlier planting, enhance yields of some crops and produce an early harvest on others or they extend the fall harvest



Early Season
Vegetables

Growing More Vegetables

- When properly used, they effectively block the feeding activity of some insects



Growing More Vegetables

- An ideal row cover is inexpensive and prevent air temperatures from falling below freezing at night



Growing More Vegetables

- It would increase growing degree-days, and avoid excessively high temperatures and humidity that can have a negative impact on growth and flower development

Growing More Vegetables

- There are no row covers that can offer more than a few degrees of frost protection



Growing More Vegetables

- Their major benefit is associated with more rapid growth by increasing daytime temperatures, not with frost protection



Growing More Vegetables

- An approximate ranking of row cover types from warmest to coolest is:

Growing More Vegetables

- Hottest
- Clear w/holes
- Spunbonded fabrics
- White w/holes
- Woven fabrics
- Clear slitted
- White slitted
- Coolest

Growing More Vegetables

- Wire hoops support most plastic row covers. After the crop is planted, 10 gauges hardened galvanized wire pieces are bent in the shape of an arch and placed in the soil at 3-4 ft. intervals

Growing More Vegetables



Growing More Vegetables

- The height of the tunnel is determined by the height of the crop to be grown

Growing More Vegetables



Growing More Vegetables



Growing More Vegetables



Growing More Vegetables

- Floating row covers made of lightweight spunbonded or woven fabrics can be placed loosely over the plants without wire supports



Growing More Vegetables

These are easier
to apply, and
are the choice
for small
gardens



Growing More Vegetables



Growing More Vegetables



Growing More Vegetables



Growing More Vegetables



Growing More Vegetables



Growing More Vegetables

– Insect control



Early Season
Vegetables

Growing More Vegetables

- Another benefit is that it excludes many crop-damaging insect pests, including aphids, cabbage loopers and other worms

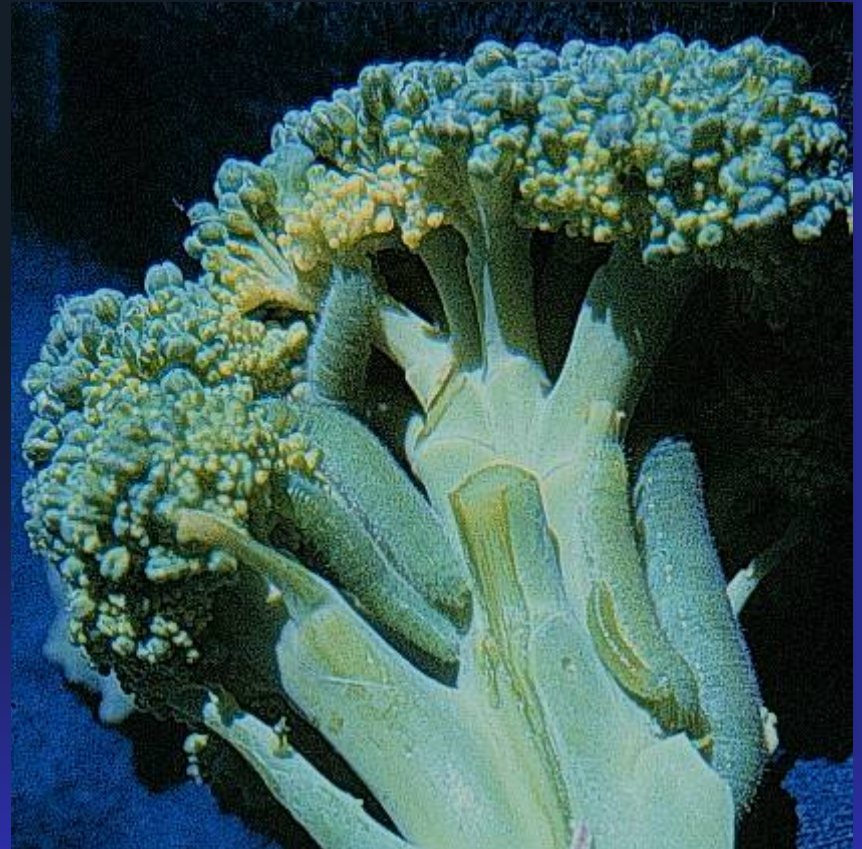


Growing More Vegetables

- For insect control, row covers must go on before the insects are present. Rotate the location of crops that attract insect pests that overwinter in the soil

Growing More Vegetables

- If you don't you can increase insect problems by trapping the insects with their food source



Growing More Vegetables

- Effective row covers must be sealed at the sides and ends of the rows, (i.e., edges covered with soil) so insects cannot get in



Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

- Spinach, Beets, and Chard: Row covers can provide protection from leaf miners. Place over the newly seeded crop and remove at harvest or when plants outgrow them



Growing More Vegetables

- It is permeable to water, oxygen and light and doesn't require hoops or other devices for support



Growing More Vegetables

- Plastic mulches enhance maturity and, by warming the soil, also allow earlier planting. Black plastic raises the soil temperature 2 or 3 degrees

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

- While the black plastic gets very warm, the heat does not transmit well into the soil. Clear plastic traps the heat and warms the soil

Growing More Vegetables

I have had some of my best success from using Wall O' Waters with clear plastic mulch



Growing More Vegetables

- Clear plastic can raise soil temperature by 10 degrees F. This allows earlier planting and crops mature 2-3 earlier



Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

**Organic
mulches
generally
cool the soil
and are not
used to
facilitate
earlier
planting**



Growing More Vegetables

- Plant protection devices keep the plants and soils warmer and protect the plants and soils from the wind



Early Season
Vegetables

Growing More Vegetables



Early Season Vegetables

Growing More Vegetables

- Whatever other methods you use, be sure to choose recommended varieties. This makes more difference than almost any other single aspect of growing plants

Growing More Vegetables

- Days to harvest are an important consideration. The number of heat units required for maturity and preferred growing temperature are also important

Growing More Vegetables

- Certain crops don't mature in our area even though our growing season is long enough because they do not get warm enough temperatures for a long enough time

Growing More Vegetables

- Though it's not nice to fool Mother Nature, it's OK to help plants to grow faster and better



Early Season
Vegetables

Growing More Vegetables

- Warmer soils and plant protection devices help make possible an accelerated start even in a questionable season



Growing More Vegetables

- Use these techniques to help bring about some of the best plantings and greatest harvests you'll ever enjoy.



Growing More Vegetables

Early Season
Vegetables

Growing More Vegetables



Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

- If you have experimented with row covers on your own, you know there is no such material at this time

Growing More Vegetables

- Cooler row cover materials reduce the risk of damaging high temperatures but that cooler materials will not increase growth and yield as quickly

Growing More Vegetables

- Use a cooler tunnel or hot caps on most of your plants, and a warmer but riskier product for earliest yields on a few plants

Growing More Vegetables

- Do not place hoops directly over the plants so that you can create slits for ventilation or irrigation if necessary

Growing More Vegetables

- Proper ventilation is essential, particularly with the hottest materials. Growers drill holes in the rolls of plastic prior to application; home gardeners may do this or slit plastic after it has been rolled out

Growing More Vegetables

- **Allowing excessive heat buildup is the most costly and most common error with first-time row cover users**

Growing More Vegetables

- As a general rule, if outside air temperatures approach 80 degrees F., additional ventilation is needed

Growing More Vegetables

- **Muskmelon: A 7-10 day jump on the season with an increase in yields. Remove tunnels when the plant begins to flower**

Growing More Vegetables

- **Summer Squash: Similar to melons, it is one of the easiest and most responsive crops to grow under tunnels**

Growing More Vegetables

- **Cucumber:** When temperatures are cool, a clear tunnel with holes is best, but ventilated white plastic or fabric tunnels are safest

Growing More Vegetables

- These lightweight spun-polyester covers produce amazing results. Cover the beds with the row covers after planting

Growing More Vegetables

- Since the cover is so light in weight, it never has to be removed. It is easy to use and causes almost no interference with the plants

Growing More Vegetables

- Temperatures underneath the cover climb 8 to 10 degrees, and the cover gives several degrees of frost protection in the event of a late spring frost

Growing More Vegetables



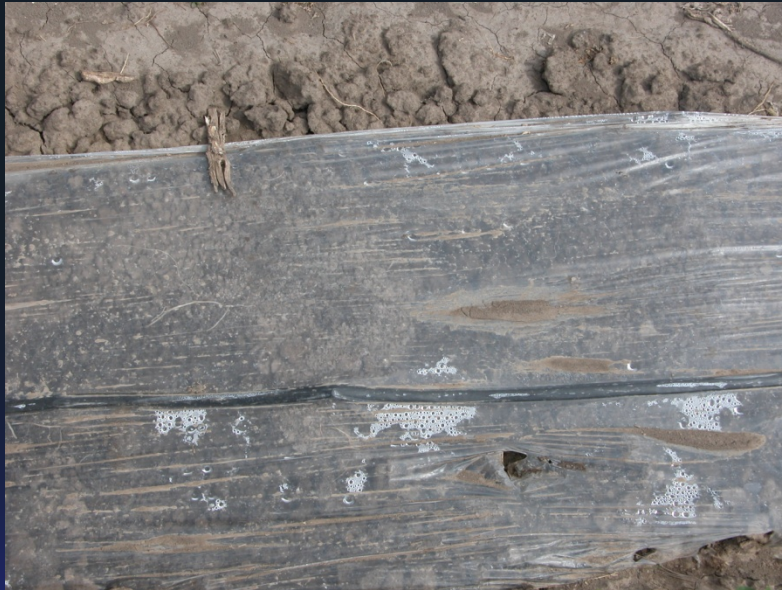
Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables

- **Pepper: Flower abortion and loss of early yields can occur with high temperatures, so adequate ventilation is critical**
- **Early growth and early yield can be successfully obtained with ventilated white plastic**

Growing More Vegetables

- **Tomato:** In general, row covers are not recommended. Loss of early yields from high temperatures is the major problem. Vegetative growth and total yield may be enhanced but early fruit are frequently small or absent

Growing More Vegetables

- **Cole Crops, Lettuce, Spinach, Celery: Row covers increase early production with these crops. Most are well suited to floating row covers**

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables

Growing More Vegetables



Early Season
Vegetables